COLORADO RIVER RECOVERY PROGRAM Project No.: 121
FY-2002 SCOPE OF WORK

Lead Agency: U. S. Fish and Wildlife Service
Colorado River Fishery Project

Submitted by: Frank Pfeifer, Project Leader
Doug Osmundson, Fishery Biologist

Address: 764 Horizon Drive, Building B
Grand Junction, CO 81506
Phone: (970) 245-9319
FAX: (970) 245-6933
E-Mail: R6FFA_GRJ@MAIL.FWS.GOV

Date: March 15, 2001
Revised date: September 24, 2001

Category:
___Ongoing
___ Ongoing-revised project
XX Requested new project
___ Unsolicited proposal

Expected Funding Source:
XX Annual funds
___ Capital funds
___ Other (explain)

I. Title of Proposal: **Verification of stocked razorback sucker reproduction in the Gunnison River via annual collections of larvae.**

II. Relationship to RIPRAP:
Colorado River Action Plan: Gunnison River
IV.A.1.b(2) Monitor and evaluate stocking results; make recommendations regarding further augmentation.
V.A.2. Identify additional spawning site of endangered fishes on the Gunnison River.

III. Study Background/Rationale and Hypotheses:

Wild razorback suckers were last captured in the Gunnison River in the late 1970s (Holden et al. 1981). The first phase in a restoration program is to stock hatchery-produced fish. To produce a self-sustaining population, stocked individuals need to (1) survive, (2) remain in the Gunnison, or if displaced downstream, return to the river via the Redlands fishway, (3) successfully spawn in either the Gunnison or Colorado rivers, and (4) progeny need to survive to adulthood and be retained in or return to the Gunnison River so as to maintain an adult population there.

Restoration stocking of razorback suckers began in the Gunnison River in April 1994 and has occurred annually since that time. As of November 2000, some 14,000 razorbacks have been stocked into the Gunnison River. In 1997, two razorbacks stocked in the previous year were recaptured in the Gunnison River (Burdick 1997). In 1998, six razorbacks stocked in previous years were captured from the Gunnison (Burdick 1998), and in 1999 four razorbacks stocked in previous years were captured from the Gunnison (Burdick 1999). Most recently, in 2000, three individuals were captured in the Gunnison River upstream of Redlands Diversion Dam (rm 5.8, 20.9 and 50.3) that were stocked more than one year prior to recapture: one was stocked in 1996, one in 1997 and one in 1998. All were at least 325 mm TL when stocked. These three fish were all over 430 mm TL in 2000 when recaptured (Burdick 2000) and therefore presumably sexually mature. How many stocked razorback suckers have survived and remained in the Gunnison River is unknown, but those that are should be actively spawning if suitable spawning habitat exists. The capture of razorback sucker larvae in the Gunnison River would verify successful spawning of stocked razorbacks.

IV. Study Goals, Objectives, End Product:

Goal: Our goal is to determine if hatchery-reared razorback suckers stocked in the Gunnison River are successfully spawning within the Gunnison.

Objective: Collect samples of larvae at up to three locations within the Gunnison River per year during and immediately after the suspected spawning season and determine if razorback larvae are present among samples.

V. Study Area: Backwater and flooded bottomland sites along the Gunnison River between Delta and Whitewater, Colorado.

VI. Study Methods/Approach

Light traps will be set at up to three locations per year during a 4-6-week period in spring. Commencement of sampling will be determined by runoff conditions and temperatures during individuals years. Muth et al. reported that razorback larvae were first collected at sites in the Green River some 20-30 days after initiation of spawning, which coincided with the first significant increase in discharge from snowmelt runoff. Their sampling began when mainstem temperatures first consistently reached or exceeded 14 C.

A minimum of three light traps will placed at each sampling location per night. Traps will be set in the afternoon of one day and then checked the following morning. This will occur twice weekly during the sampling period. Sampling sites will include the floodplain area at Delta and at least one site further downriver each year. During the first year, we propose to set traps in floodplain

habitat near Delta and at a site near Whitewater, possibly at the mouth of East Creek. In subsequent years, sampling may be repeated at these sites or sites may be moved depending on results of the past year. In addition to the light traps, dip-net seine sampling will also be conducted on the afternoon the traps are set.

Light-trap and dip-net samples will be preserved in 100% ethanol and sent to the Larval Fish Laboratory for processing and identification.

VII. Task Description and Schedule

Description

Task 1. Collect samples of larvae.
Task 2. Analyze samples in the lab.
Task 3. Write final report

Schedule

Tasks 1 and 2: 2002-2004
Task 3: 2005

FY-2002 Work (year 1 of multi-year study)

Deliverables/Due Dates: Prepare annual report (12/2002).

Budget estimate

Task 1		
	Project Leader (3 weeks)	4,500
	Project Biologist (8 weeks)	11,000
	Bio-technicians (6 weeks)	6,000
	Administrative Officer (4 weeks)	4,500
		$26,000
	Equipment	3,000
Task 2		10,000
Total		$ 39,000

FY-2003 Work (year 2 of multi-year study)

Deliverables/Due Dates: Prepare annual report (12/2003).

Budget estimate

Task 1 (labor) $28,000	$31,000
Task 2 (equipment)	11,000
Total	$ 42,000

FY-2004 Work (year 3 of multi-year study)

Deliverables/Due Dates: Prepare annual report (12/2004).

Draft Final Report to peer review	4/1/2005
Draft Final Report to Biology Committee	6/1/2005
Final Report completed	8/15/2005

Budget estimate

Task 1 (labor)	$29,000
Task 2	12,000
Total	$ 44,000

FY-2005 Work (year 4 of multi-year study)

Deliverables/Due Dates: Prepare draft and final reports (4/2005).

Budget estimate

Task 3	$15,000
Total	$ 15,000

VII. Budget Summary

	Project Cost
FY-2002	$ 39,000
FY-2003	$ 41,000
FY-2004	$ 44,000
FY-2005	$ 15,000
Total	$139,000

IX. Reviewers:

Bruce Haines and Steve Platania

X. References:

Burdick, B. D. 1997. Evaluation of razorback sucker stocking program in the Colorado and Gunnison rivers. Annual Report to Recovery Implementation Program, Grand Junction, Colorado.

Burdick, B. D. 1998. Evaluation of razorback sucker stocking program in the Colorado and Gunnison rivers. Annual Report to Recovery Implementation Program, Grand Junction, Colorado.

Burdick, B. D. 1999. Evaluation of razorback sucker stocking program in the Colorado and Gunnison rivers. Annual Report to Recovery Implementation Program, Grand Junction, Colorado.

Burdick, B. D. 2000. Evaluation of razorback sucker stocking program in the Colorado and Gunnison rivers. Annual Report to Recovery Implementation Program, Grand Junction, Colorado.

Holden, P. B., C. Richard, L. W. Crist, and J. R. Campbell. 1981. Aquatic biology studies for proposed Colorado Ute Electrical Association power plant near Grand Junction, Colorado. BIOWEST, Inc., Logan, Utah. PR 56-1.